Both wings orange-yellow, the secondaries not so bright as the primaries, both having a broad outer margin of neutral-grey, tapering somewhat narrower at the tornus.

Expanse 50 mm.

Hab. Lagos, West Africa ; December 8th.

Type in the Oxford Museum.

XXVI.—*On* Elporia, *a new Genus of Blepharocerid Flies from South Africa.* By F. W. Edwards, B.A., F.E.S.

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In the 'Annals and Magazine of Natural History' for June 1912, I described under the name *Kelloggina barnardi* the only species of Blepharoceridæ which has yet been recorded for the Ethiopian region. At the time of writing, the insect appeared to me to possess all the main characters of the genus *Kelloggina*, but, as will now be shown, the South African species must be excluded from that genus on account of an important difference in the structure of the eyes.

I was led to make a more careful examination of *K. barnardi*, on account of a suggestion made by Prof. M. Bezzi, in his paper "Blefaroceridi Italiani" (1913), that the larvæ described as *K. barnardi* did not belong to the same species as the adults, as these larvæ appeared to him to be related to *Blepharocera* *. The specimens on which the original description of *K. barnardi* was founded, being for the most part newly hatched, were somewhat shrivelled, and, under a dissecting-microscope, there was no evidence of any division of the eyes into two portions, as in many genera of this family. This was only what was to be expected, as the wing-venation of the new species was practically identical with that of *Kelloggina* and *Paltostoma*, the latter of which at least undoubtedly has simple eyes. When, however, specimens of *K. barnardi* were boiled in potash, it was at once evident that the eyes were very distinctly divided into upper and lower portions †, although, as there was very little difference in the size of the facets of the upper and lower portions, it was only when the eyes were unshrunken that

* As has recently been shown by Scott, this suggestion was unfounded.

† Scott has recently stated that the contrary is the case, but his observation was made on a badly-mounted specimen.

their real structure was discernible. Subsequently I received larvæ and pupæ of a second species of South African Blepharoceridæ, and when, acting on a suggestion made to me by Mr. H. Scott, I dissected out imagos from the pupæ of this form and of *K. barnardi*, I found that here again the eyes were of the same type, though there were extremely interesting differences between the two forms which will be described below. It thus appears that these South African species form to some extent a connecting-link between the South American *Kelloggina* and the European *Apistomyia*, resembling the former in wing-venation and the latter in the structure of the eyes. Dr. A. Lutz informs me that he has recently obtained both sexes of a species of true *Kelloggina* in Brazil, and that in both males and females the eyes are simple. As the condition of the eyes is (doubtless correctly) regarded as a character of generic importance in this family of flies, it becomes necessary to form a new genus for *K. barnardi* and the new species referred to. I propose the term *Elporia* *, which may be defined as follows:—

Elporia, gen. nov.

Imago: Eyes dichoptic, hairy, divided by a horizontal band into two distinct parts. Antennæ 14- or 15-jointed. Mouth-parts similar in the two sexes; mandibles absent; maxillæ well developed, but without cutting-teeth, as long as the first joint of the palpi; palpi three- or four-jointed, longer than the proboscis by fully the length of the last joint; first joint longer than the others. Proboscis as long as or longer than the vertical diameter of the head. Wing-venation as in *Paltostoma*. Front and middle tibiæ without spurs, hind tibiæ with one large spur. Last tarsal joint without any group of spines at the base. Claws usually elongate, with several spines on the underside, sometimes partly pulvilliform.

Pupa: Integument smooth; respiratory horns each composed of four flattened lamellæ, the two inner much narrower and rather shorter than the two outer.

Larva: Antennæ rather short, two-jointed. Integument provided with more or less distinct short spines, the largest of which are arranged in a definite way, two occurring near the anterior border, four near the posterior border, and one at each side of each of the five intermediate segments. Six pairs of hairy lateral processes. Five pairs of gill-tufts, each

* From ἐλπωρή, hope.

of which is composed, in the fully-grown larva, of five filaments, which arise practically co-basally. Two pairs of more or less spherical anal papillæ. Mouth-parts and suckers rather closely resembling in structure those described by F. Müller.

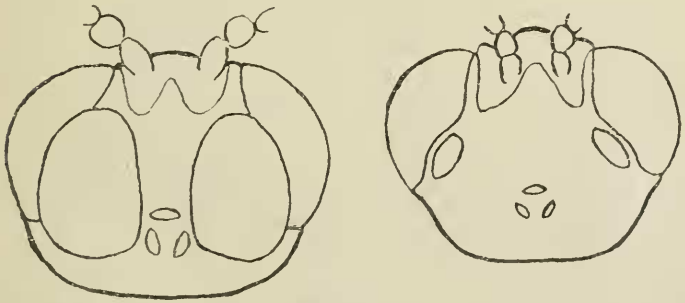
Type-species. *Kelloggina barnardi*, Edwards (1912).

The genus differs from *Paltostoma*, to which in many respects it is obviously related, as follows:—the longer male palpi, the absence of female mandibles and the shorter proboscis, the divided eyes, and in the structure of the last tarsal joint; in the different arrangement of the spines of the larva, the smaller number of gill-filaments in each tuft, and in the different anal papillæ. To *Kelloggina* it is more closely related, the only important difference which can at present be pointed out being in the divided eyes. Other differences, however, will probably be found when more information is available as to the structure and life-history of *Kelloggina*.

1. *Elporia barnardi*, Edw.

As my original description of the head of *K. barnardi* was incomplete and inaccurate in several respects, it is necessary to give a redescription. In the first place, it must be stated

Fig. 1. Fig. 2.



Elporia barnardi.

Fig. 1.—Head of male; diagram showing division of the eyes.
Fig. 2.—Head of female, to show the same.

that in the figure of the female fly (Ann. & Mag. Nat. Hist. ser. 8, vol. ix. pl. xx. fig. 1, 1912), the head depicted is really that of the male and not the female, the latter sex having a much broader front and larger terminal joint to the antennæ.

The eyes in both cases are dichoptic, the front, however, being fully twice as broad in the female as in the male. Pubescence rather short, being only about as long as the width of two facets. In the male the eyes are divided by a horizontal line (it is too narrow to be called a band) into an upper and a lower portion ; the upper is nearly two-thirds the size of the lower and its facets are very slightly larger. In the female also the eyes are divided, but in this sex the upper portion is very much smaller than the lower, and its facets are very markedly smaller. The antennæ are 15-jointed in *both* sexes (my previous statement that the female antennæ were only 14-jointed was incorrect) ; in the male the joints of the flagellum are all very much of the same size and nearly globular; the female antennæ are similar, except that the terminal joint is distinctly enlarged and more oval. The palpi are four-jointed, but the division between the last two joints is not well marked, so that in some mounted

Fig. 3.

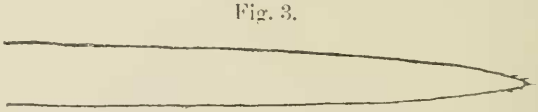
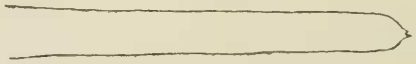


Fig. 4.



Elporia barnardi.

Fig. 3.—Labrum.
Fig. 4.—Hypopharynx.

specimens they appear to be only three-jointed. The first joint is the longest, being slightly longer than the second and third taken together ; the second and fourth are each a little longer than the third. The second joint has on its internal-ventral aspect a circular pit, the floor of which is occupied by a sense-organ, the structure of which is difficult to make out. Under a low magnification this pit appears as a dark patch. A very similar structure has been described by Scott in the second joint of the palpi of *Paltostoma*, while organs differing to some extent from these, although evidently homologous, occur in the Simuliidæ, Mycetophilidæ, and Rhyphidæ*. The labium has precisely the same structure in the two sexes ; there are scattered stiff-pointed hairs all over it, and,

* These organs were first described by Weschó (Biol. Bull. vol. xxiii. 1912, p. 267).

Fig. 5.

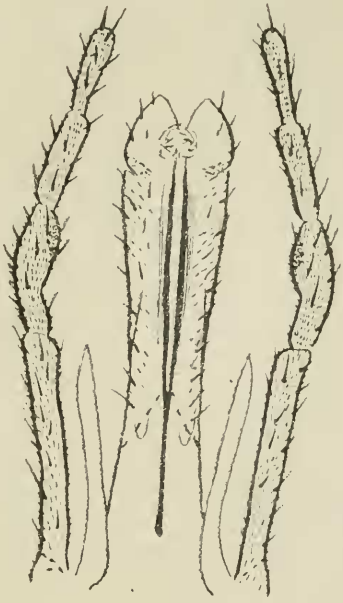


Fig. 6.

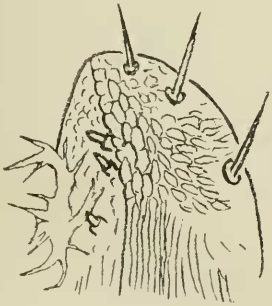


Fig. 7.

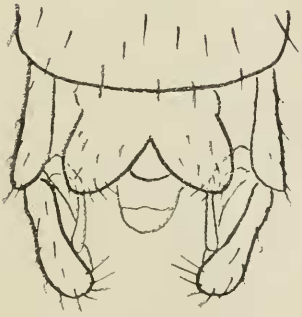


Fig. 8.

Fig. 9.

Elporia barnardi.

Fig. 5.—Maxillæ and labium.
Fig. 6.—Tip of labellum, more highly magnified.
Fig. 7.—Genitalia of male, dorsal view.
Fig. 8.—Anal armature of larva.
Fig. 9.—Spiracle of larva.

in addition, at the tip of the labella there are two or three very short blunt "spines," closely resembling the "taste-hairs" which have been described by Wesché and others in a variety of insects. The labella themselves have a beautiful "honey-combed" structure.

The outer lamellæ of the pupal respiratory horns are somewhat triangular, about half as long again as the breadth of the base, and bluntly pointed. The inner lamellæ are a little shorter, rounded at the tip, but not at all tapering, and only about one-third as wide as the base of the outer lamellæ.

The larvæ have small spines on their dorsal surface, arranged on the same plan as in *E. capensis*, though they are much less conspicuous; there are no spines on the lateral processes. As noticed by Scott in *Paltostoma*, the number of filaments in the branchial tufts increases with the age of the larva; the small larvæ have three in each tuft, the fully-grown specimens have five. The form of these tufts is the same as in *E. capensis*. I have seen no first-stage larvæ, and cannot therefore say whether these have less than three gill-filaments. The extreme tips of the hairy lateral processes are bifid on the underside, a character which is also to be noticed in *E. capensis*, though apparently it does not occur in *Paltostoma*.

The spiracles are present in the same positions as in *Paltostoma*; they appear simply as chitinous rings. The anal papillæ are subequal in size; hidden by them, but plainly visible in a mounted specimen, is the anal armature.

Mr. K. H. Barnard has kindly supplied me with some notes on the seasonal occurrence of *E. barnardi* in Platteklip Gorge. His records are as follows:—

"3. ix. 1911. Full-grown larvæ.
"8. x. 1911. Pupæ, imagos.
"2. i. 1912. 1 full-grown larva, pupæ, 1 imago.
"5. viii. 1912. Various-sized larvæ from 2 mm. to full-grown; pupæ.
"16. ii. 1913. No larvæ or pupæ.
"22. vi. 1913. Larvæ 2–3 mm.
"2. viii. 1913. Larvæ 2–4 mm. A few pupæ.

"There would seem to be three broods a year at least, but with so many gaps one cannot state positively."

Mr. Barnard has also found *E. barnardi* "in the suburbs of Cape Town, at a level above the sea of not more than 200 ft., in a swiftly-running stream from the mountain, but not in any sense a precipitous mountain-stream; the larvæ and pupæ are attached to boulders."

2. *Elporia capensis*, sp. n.

Early in 1914 I received larvæ and pupæ of a Blepharocerid taken near Stellenbosch, Cape Province, U. S. Afr., at an altitude of about 500 feet. These were obviously distinct from *E. barnardi*, but, as no adults were received with them, they were put on one side as temporarily indeterminable. Recently, however, I have dissected out two examples of each sex from these pupæ, and these specimens are in such an advanced stage of development that it is possible to give a fairly complete description of their structural characters, though, of course, nothing can be said concerning coloration. This, however, is an omission of small importance, and, as the species shows several interesting and rather remarkable differences from *E. barnardi*, it seems desirable to take this opportunity of describing it.

Imago: front of the *same width in the two sexes*, narrower than that of the female, but broader than that of the male of *E. barnardi*. Eyes *in both sexes* divided into two portions, of which the upper is a little larger than it is in the female of *E. barnardi*; *in both sexes* the facets in this upper portion are slightly smaller than they are in the lower. Pubescence of eyes longer than in *E. barnardi*, about as long as the width of three facets. Antennæ fourteen-jointed in both sexes, the second scapal and the first two or three flagellar joints about half as long again as broad, the first-named being considerably enlarged apically; the remaining joints more or less globular; there is no marked sexual difference in the size of the terminal joint, though, if anything, it is a little longer in the male than in the female. Proboscis only about as long as the vertical diameter of the head. Labrum of quite a different shape to that of *E. barnardi*, with no hairs at its tip; the hypopharynx, on the other hand, has a slightly hairy tip like that of the labrum of *E. barnardi*. *Palpi three-jointed*, longer than the proboscis by the length of their last joint; first joint as long as the last two combined; last two equal in length; second joint with a circular pit as in *E. barnardi*. Labium rather stouter than in *E. barnardi*, the labella without any "taste-hairs" at the tip, and without a distinct honeycombed structure.

The genitalia, as in *E. barnardi*, and as Dr. Lutz informs me is the case in *Ketloggina*, are not very dissimilar at first sight in the male and female. Their structure is shown in the figures (figs. 13 & 14). The female has three *receptacula seminis*.

The hind tibiæ, as in *E. barnardi*, have a single spur at

Fig. 10.

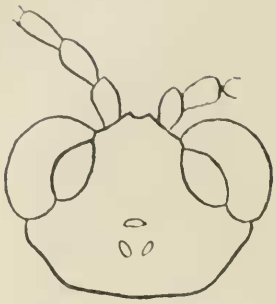


Fig. 11.

Fig. 12.

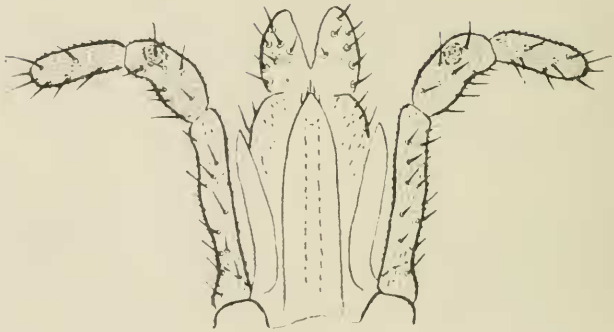
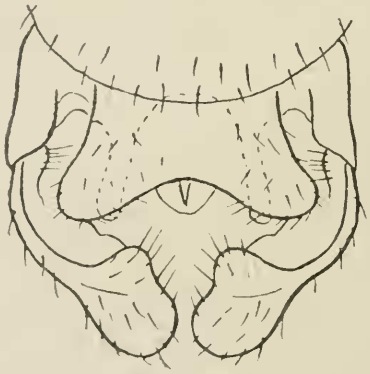


Fig. 13.



Elporia capensis.

Fig. 10.—Head, male or female, showing division of eyes.
Fig. 11.—Labrum.
Fig. 12.—Hypopharynx, maxillæ, and labium.
Fig. 13.—Genitalia of male.

Fig. 14.

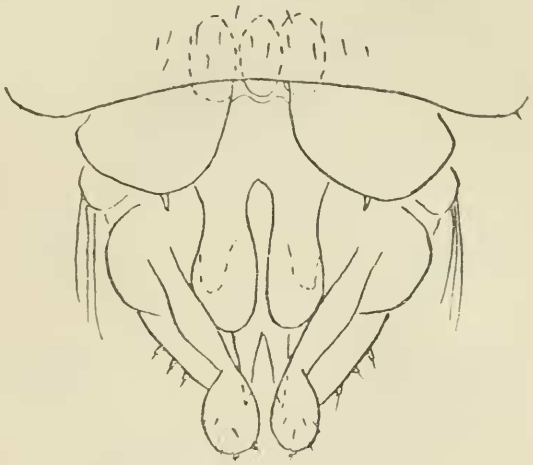


Fig. 15.

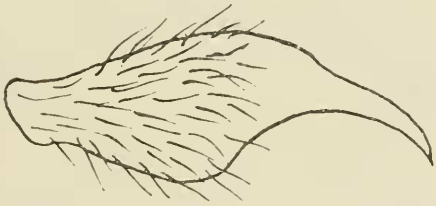
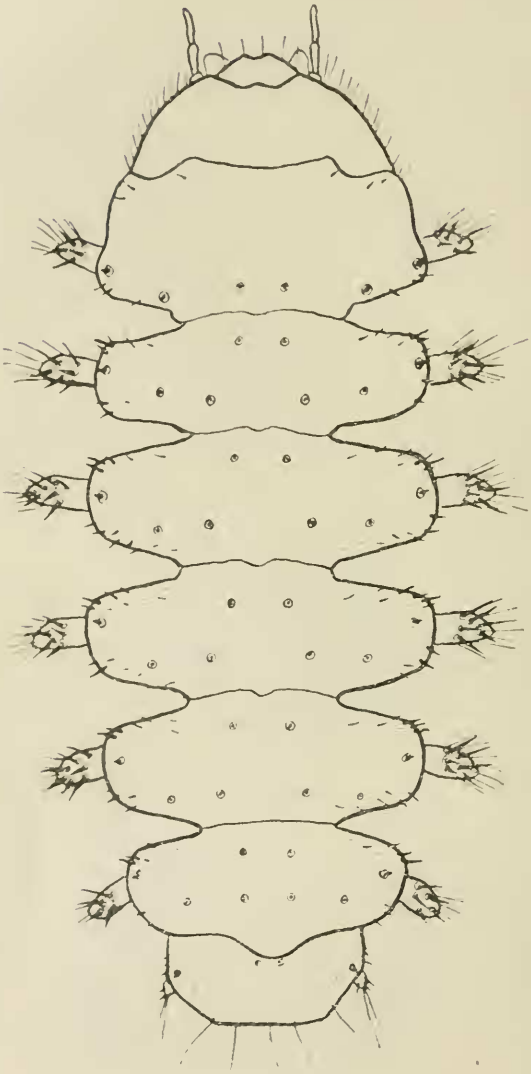


Fig. 16.

Elporia capensis.

Fig. 14.—Genitalia of female.
Fig. 15.—Claw of male.
Fig. 16.—Claw of female.

Fig. 17.



Elporia capensis.

Larva, dorsal view, showing arrangement of the spines.

Fig. 18.

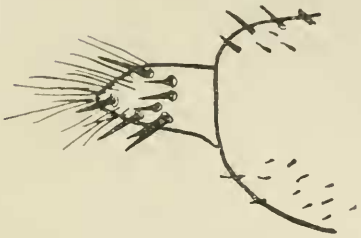


Fig. 19.

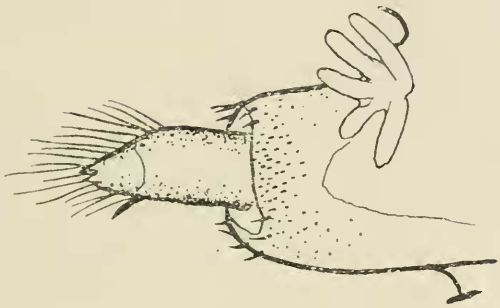


Fig. 20.

Fig. 21.

Fig. 22.

Elporia capensis.

Fig. 18.—One of the lateral processes of the larva, more enlarged; dorsal view.
Fig. 19.—The same, ventral view, to show form and position of gill-tuft.
Fig. 20.—Tip of antenna of larva.
Fig. 21.—Anal armature of larva.
Fig. 22.—Spiracle of larva.

the tip. The proportions of the tarsal joints are much the same as in *E. barnardi*, except that the first and fifth joints are relatively a little longer; the first joint is as long as the next three taken together; the second, third, and fourth gradually decrease in length, while the fifth is as long as the third and fourth combined. The male claws are swollen towards the base, with a thin curved tip; the basal portion is densely hairy, almost pulvilliform, but there are no spines on the underside. The female claws, on the other hand, rather closely resemble the male claws of *E. barnardi* in shape and in possessing several sharp spines on the underside. The male claws are very interesting, as exhibiting some approach to the abnormal pulvilliform claws of the male *Hapalothrix lugubris*.

The wing-venation is apparently the same as in *E. barnardi*, although it is very difficult to make out in detail, owing to the crumpled condition of the wings.

Pupa of a somewhat different shape from that of *E. barnardi*; the portion in front of the respiratory horns descends less steeply (at an angle of about 45° instead of about 60°). The respiratory horns closely resemble those of *E. barnardi*.

Larva in all essential features resembling that of *E. barnardi*, but much more spiny, the largest and most conspicuous spines occurring on the lateral "pseudopodia." As in the case of *E. barnardi*, the young larvæ have three, the full-grown ones five, gill-filaments in each tuft. There is a small, slightly spiny, lateral projection on the anal segment, which in *K. barnardi* is hardly present, being represented by the merest knob; from this projection or knob arise in both species two long hairs, springing from a common base; these hairs are rather longer and more conspicuous in *E. barnardi* than in the new species. The spiracles are present, as in *E. barnardi*, and have a more complicated structure. The two pairs of anal papillæ are very unequal in size and the anal armature differs from that of *E. barnardi*. The tip of the antennæ bears two small appendages, one of which is two-jointed.

Summary and Conclusions.

1. It has been found necessary to found a new genus, *Elporia*, for *Kelloggina barnardi* on account of the divided eyes. This genus differs from most Blepharoceridæ in that the females, like the males, have no mandibles.

2. A new species of this genus is described, differing markedly from *E. barnardi* in all its stages.

3. The larva of the new species, even more than that of *E. barnardi*, resembles that of *Paltostoma*. Both species, however, differ from *Paltostoma* in the form of the branchial tufts, which seems to strengthen the view that these organs are valuable for purposes of classification.

4. The arrangement of the larval spines appears to be a matter of considerable constancy, and, therefore, systematic importance.

XXVII.—*The* Xylophilidæ *of Ceylon.*

By G. C. Champion, F.Z.S.

Mr. G. E. Bryant having kindly lent me his series of the Coleopterous family Xylophilidæ from Ceylon, named by Pic in 1912, the opportunity is taken of describing some additional species from the same island, mainly obtained by Mr. G. Lewis in 1881–1882. The types of the new forms, including the two detected in Mr. Bryant's collection, are all contained in the British Museum. Twenty-one Xylophilids are now known from the Island, four only of them having been identified from other Indian localities. Kandy, it may be noted, is at a much lower level (1546–1727 ft.) than the places where Mr. Lewis's insects were obtained.

Hylobænus, Pic.

Hylobœnus fasciatus.

Hylobœnus fasciatus, Pic, Ann. Soc. Ent. Fr. 1912, p. 272.

Hab. Ceylon, Galle [type] ; Tenasserim, Tavoy.

The type of this species was captured by Mr. Bryant at Galle on July 1st, 1908. There is another example of it in the British Museum, found by Doherty, at Tavoy, this latter having the intermediate and posterior femora and tibiæ almost black, but differing in no other respect from the somewhat immature type, which has the intermediate legs (the knees excepted) testaceous. Both appear to be females. The completely connate first two ventral segments is an additional character for the genus *Hylobœnus*.

Euxylophilus, gen. nov.

Antennæ with joints 5–10 flattened, dilated, and serrate, 3 narrow, cylindrical, longer than 2 or 4 ; eyes feebly emarginate ; prothorax longer than broad, subovate ; elytra very elongate ; the other characters as in *Xylophilus*, Latr.

Type, *E. principalis*.